

**California Air Resources Board Responses to:**  
**CAPCOA PRIORITIES FOR CORRECTING VAPOR ASSIST AND BALANCE**  
**VAPOR RECOVERY SYSTEM PROBLEMS**  
(dated October 16, 1998)

1. REQUIRE GAS-TIGHT SYSTEMS

- 1A. **(HIGH PRIORITY)** Evaluate air leaks associated with the Phase I piping connections, flapper-valve equipped drop tubes, and drop tubes which cause unsaturated air to be ingested into the liquid during bulk gasoline deliveries which significantly reduces Phase I efficiency.

Requested CARB Action:

1. Evaluate the leak intensity as a function of time.

Action to Date: All vacuum assist systems are required, in the current certification Executive Orders (E.O.'s) to pass annual pressure integrity tests. Bleed holes in drop tubes have never been allowed (not as certified).

The following requirements are being incorporated in future E.O.'s:

"All vapor piping and connections shall be maintained vapor tight. Whenever the local district finds a leak by using a leak detection solution, the district may issue a notice to comply, pursuant to Health and Safety Code Section 41960.2(e)."

"All Phase I adaptors, fittings and connections shall be maintained vapor tight. Whenever the local district finds a leak by using a leak detection solution, the district may issue a notice to comply, pursuant to Health and Safety Code Section 41960.2(e)."

Future Action: See response to 1A2.

2. Develop a performance test procedure.

Action to Date: None.

Future Action: CARB staff will develop specifications for simple tools which can be used to quantify the leak rate from Phase I drop tubes and/or overfill protection tubes, and instructions in the use of these tools. A draft procedure will be made available for peer review by January 1999.

CARB staff will also work with CAPCOA to develop a data collection form, which can be used by local district staff during inspections. CARB staff

will additionally monitor the performance of Phase I components in test stations. Problem components identified by this survey will be evaluated by CARB and, if appropriate, decertified. (This may involve the Water Resources Control Board, which recommends the use of this overflow protection devices in fill tubes as opposed to ball float valves).

District Action:

1. Request concurrence from CARB to disallow the continued installation of flapper valve-equipped drop tubes.

ARB Response: We will grant concurrence only after supporting field data is obtained.

2. Utilize appropriate test methods to determine performance of flapper valve-equipped drop tubes.

ARB Response: Concur.

- 1B. **(HIGH PRIORITY) Evaluate leaks associated with leaky drain valves and Phase I stress failures. Systems designed to handle ORVR and current systems with manifolded tank vapor spaces above ground require higher levels of gas-tightness.**

Requested CARB Action:

1. Decertify drain valves.

Action to Date: CARB staff worked with staff of Water Resources Control Board (WRCB) to change the requirement for spring-loaded drain valves to simply require that the containment box be capable of being immediately drained, without specifying a specific design criteria. The spring-loaded valves are prone to leakage because of debris that becomes lodged in the seal. Since this change was made, one manufacturer has applied for and obtained certification of a containment box which has a hand pump already installed.

Future Action: ARB will take steps to decertify the use of spring actuated drain valves. To be initiated in January of 1999. Existing drain valves in spill containment manholes may be replaced with a plug, providing that an acceptable alternative for evacuating the liquid is put in place.

2. Include annual leak decay testing for balance system executive orders.

Action to Date: Current data indicates that, approximately 90% of the time, balance systems equipped with PV valves tend to operate at slightly negative pressures. This raises questions about the necessity of requiring annual pressure integrity testing with regard to the cost of performing this test.

Future Action: We will work with the districts to collect additional data in order to evaluate the need for annual testing of balance systems.

District Action:

1. Require annual system static pressure testing of balance systems.  
ARB Response: We will need to work together to substantiate the need by data.
2. Request concurrence from CARB to disallow continued installation of drain valves.  
ARB Response: This will be provided for spring actuated drain valves.

## 2. DEFECTIVE EQUIPMENT

- 2A. **Replace the OPW 11VAI Aluminum Nozzle over the next four years.** Although replacements of aluminum spouts with stainless steel spouts is helpful, the OPW 11VAI nozzle remains a problem because of separation of the plastic vapor path at the top from the nozzle body.

1. Requested CARB Action:  
Decertify the OPW 11VAI nozzle unless OPW implements solutions to the problem.

Action to Date: OPW reports that all aluminum spouts in the possession of distributors and service stations contractors have been recalled and replaced with the stainless steel spouts. All production of aluminum spout kits and nozzles with aluminum spouts has ceased. OPW believes the problems associated with the nozzle vapor path were a direct result of liquid blockages in the hoses due to vapor piping configurations inside the dispenser.

Future Action: CARB staff will conduct field evaluations of the OPW 11VAI nozzles to determine the vapor path integrity. Results of the testing will be used to help determine what future actions should be taken.

District Action:

1. Request concurrence from CARB to disallow continued installation of the OPW 11VAI nozzle.  
ARB Response: We will need to first evaluate if the actions taken by OPW has solved the problem.
  2. Perform appropriate tests and "tag out" defective nozzles.  
ARB Response: Concur.
- 2B. **(HIGH PRIORITY) Eliminate hose crimping.** "Curly Q" hose configurations associated with the Wayne "DL" dispensers and Healy systems are crimping hoses resulting in vapor blockages.

## Requested CARB Action:

1. Clarify which bootless systems are certified with the "Curly Q" configuration and which ones are not.

Action to Date: It is not clear which systems are certified with or without the "Curly Q" configuration. In addition, it has not been sufficiently demonstrated that the "Curly Q" design is a significant source of vapor recovery failures. However, it has been demonstrated, if a problem exists, it can be rectified by incorporating swivels at both ends of the "Curly Q".

Future Action: This clarification will be provided to the Districts by October 20th. It is recommended that new installations of the "Curly Q" only be allowed with the appropriate swivels at both ends.

## District Action:

1. Request concurrence from CARB to disallow new installations of the "Curly Q" hose configurations until design changes are implemented.

ARB Response: Concurrence was granted April 28, 1998.

**2C. (HIGH PRIORITY) Re-evaluate pressure/vacuum relief valves.**

## Requested CARB Action:

1. Re-evaluate P/V valves, especially the "clamp-on" designs, for a period of six months.

Action to Date: The "clamp-on" designs were evaluated in field-testing and successfully completed the certification criteria.

Recently, in response to complaints about a particular P/V valve, samples of new valves were acquired and bench tested at CARB's shop, and an unacceptable failure rate was documented. The manufacturer was required to improve the design of the valve, and to implement 100% factory testing of all valves, and was fined \$10,000.

Future Action: CARB staff will design and fabricate a test apparatus with which "clamp-on" and threaded P/V valves can be tested in the parts houses. CARB staff will provide specifications for the fabrication and use of test equipment to the local districts via CAPCOA. A draft procedure will be made available for peer review by February 1999.

## District Action:

1. Assist CARB with the auditing of equipment wholesalers and forward collected P/V valves to CARB for testing.  
[ARB Response:](#) Concur.

## 3. REVISE EXECUTIVE ORDERS

- 3A. **(HIGH PRIORITY) Include a pressure-drop budget.** Different pressure drops through system components can adversely affect the ability of the bootless systems to maintain an acceptable A/L ratio during refueling events.

## Requested CARB Action:

1. Determine the pressure-drop of each approved component and include this in the executive order in the form of a component matrix. This will provide a means for proper selection of components that will not adversely affect the performance of the system.

[Action to Date:](#) The Gasoline Pump Manufacturers Association (GPMA) has assembled a committee consisting of vapor recovery equipment manufacturers for the purpose of developing a pressure drop budget standard for systems.

[Future Action:](#) CARB will, by November 10, write to the manufacturers of each component for which pressure drop is an issue, and request that they establish the pressure drop across the vapor side and submit the information to CARB.

CARB will require that the manufacturers of each system that use the above components establish the range within which their system operates properly and provide this information to ARB by August 1, 1999. This range will be verified by field testing conducted or observed by CARB staff, and included as a specification of certification.

CARB staff will, in cooperation with CAPCOA, develop an inspection form which can be used to verify that the "hanging hardware" complies with the requirements of the certification. A draft form will be prepared by December 1, 1999.

## District Action:

1. Assist CARB in developing an inspection form that documents the components installed and the associated pressure drops  
[ARB Response:](#) Concur.

- 3B. **Reference manufacturer's installation guidelines and on-going maintenance manuals in executive orders.** It is suggested that installation guidelines and preventative maintenance manuals be referenced in the applicable executive orders. The required maintenance manuals are not being distributed by certain manufacturers. Yet, Section 41954 (i) (2) of the Health & Safety Code implies they are needed to determine compliance. The primary distributors of the maintenance manuals should be companies that have been given "ownership" of the equipment certifications.

Requested CARB Action:

1. Specify approved installation and maintenance manuals in the executive order after.

Action to Date: Executive Orders issued after 1993 require that the Manufacturer provide, to the station owner, operator or designee, CARB-approved copies of the installation and maintenance manuals along with instructions in the proper use of the system, its repair and maintenance schedule, and where system and/or component replacements can be readily obtained, which are to be stored at the facility. Failure to meet this condition provides the districts with the authority to seek penalties.

Future Action: District enforcement.

2. Place approved installation and maintenance documents on the internet.

Action to Date: None.

Future Action: CARB will initiate dialog with the equipment manufacturers to discuss placing this information on the internet.

- 3C. **Require system installation and service contractors be industry-trained and list these installation and service contractors on the internet.** CARB agreed to place the names of equipment manufacturer and their associated web sites on the CARB internet site that will have a list of individuals who have received manufacturer their training. That has not been done.

Requested CARB Action:

1. Proceed with agreement to place the names of industry-trained installers and service contractors on the internet.

Action to Date: None.

Future Action: The CARB website will be updated to include a link to the industry approved service contractors. A letter will be sent out, requesting that the system manufacturers supply CARB with an address that we can link to which contains this information. As these links are forwarded to CARB, they will be placed on our site. Project initiated by November 6.

2. Investigate the feasibility of a certification program for installers and service contractors.

Action to Date: None.

Future Action: ARB will investigate the feasibility of developing a certification program for installers and contractors. Initiate by November 6.

- 3D. **Require that the manufacturer that “owns” each executive order approve the addition of any hanging hardware prior to inclusion into its executive order.** This would enable system manufactures to request removal of “certified” components from their executive order if they can provide data showing an unacceptable failure rate of such components.

Requested CARB Action:

1. Proceed with the necessary revisions to the executive orders to establish liability for all components certified for a system.

Action to Date: Amendments to the language pertaining to certification ownership and liability has been drafted for inclusion into the Certification Procedure.

Future Action: This language will be made available for review at the November 10, workshop meeting and is intended to be part of the Enhanced Vapor Recovery (EVR) package. This package is currently scheduled for Board review in August 1999.

- 3E. **Prohibit on non-processor equipped bootless systems the further installation of underground storage tanks that are manifolded only at the aboveground vents.** Most bootless nozzle executive orders allow this configuration. These configurations have the potential to reduce Phase II efficiencies. Existing facilities with this piping configuration should manifold the tanks underground as shown in the executive order or install Phase I and Phase II piping connections at the tanks which can withstand the stress of bulk deliveries without the creation of leaks.

Requested CARB Action:

1. Disapprove this configuration for all non-processor-equipped bootless systems.

Action to Date: All certification E.O.'s require that new installations of the bootless nozzle type systems manifold storage tanks below ground.

Future Action: CARB requests CAPCOA to provide information on the number of installations with this configuration so we can estimate the emissions impact of implementing this prohibition.

District Action:

1. Request concurrence from CARB to disallow the continued installation of non-processor equipped bootless systems associated with underground tanks manifolded only at the aboveground vents.

ARB Response: Withhold until the above requested information has been submitted and reviewed.

- 3F. **Revise the executive orders to require that documentation of any repairs and replacements necessary to successfully conduct the start-up and annual A/L and static pressure tests be submitted to the local district with the final test results.** This will allow the districts to collect data, in conjunction with CARB, to improve performance of the components.

Requested CARB Action:

1. Revise the executive orders as outlined above.

Action to Date: At CARB's request, Western States Petroleum Association (WSPA) is developing a pilot plan for the reporting of maintenance data. A meeting was hosted by WSPA on October 8, 1998, at which the scope of the project, the type of data to be collected, and the means by which it will be reported were agreed upon. This would include all maintenance, not just that performed as a result of annual tests, and hopefully will yield more useful information.

Future Action: If this pilot program proves effective, it will be implemented on a larger scale. WSPA has suggested that, assuming the pilot project proves the concept, it may be appropriate for the program to then be turned over to CARB.

District Action:

1. Implement via permit condition.

ARB Response: The Compliance Division will request an opinion from our legal staff by October 20th regarding this issue.

- 3G. **Require new installations of bootless Phase II systems to (1) manifold storage tank vents to a single P/V valve and, (2) use a single stem dispenser configuration.** Pressure-related fugitive emissions can be minimized by reducing the number of potential leak sources at gasoline dispensing facilities. Reducing the number of P/V valves on storage tank vent pipes from three to one, and the number of nozzles from six per dispenser to two can significantly reduce the emissions of gasoline vapors.



## Requested CARB Action:

1. Revise the relevant executive orders to require manifolding of storage tank vents to a single P/V valve and installation of single stem dispenser configurations.

Action to Date: None.

Future Action: Normally the certification and test procedures do not specify equipment configurations, but instead present standards that must be met. This proposal will be included as part of the EVR package and will be presented to the Board for approval. The EVR package is currently scheduled for review in August 1999.

## District Action:

1. Request concurrence from CARB to disallow the continued installation of multiple P/V valves and multi-stem dispenser configurations.

ARB Response: Prior to granting concurrence, it would be prudent to go through the rule-making process to allow industry an opportunity to comment on this proposal.

- 3H. **Require a start-up and annual test of CARB-required monitors for those bootless Phase II systems where failure of a single "critical" component will cause a large degradation of the efficiency for the entire facility.** Some bootless system (i.e. Hirt, Hasstech, Healy) have a critical component(s) that results in large Phase II efficiency degradation for the entire facility if the component(s) fails. In recognition of this, CARB has required monitors for these systems. Title 17 and the CH&SC require local districts to "tag" all nozzles affected by a "significant" defect.

## Requested CARB Action:

1. Require both start-up and annual verification tests of "critical" components to ensure the CARB-required monitors function properly.

Action to Date: None.

Future Action: CARB will work with the system manufacturers and the Districts to develop appropriate start-up and annual verification tests for system specific monitors. Once these have been developed, they will be incorporated into the applicable E.O.'s. Initiation date: December 1, 1998.

## District Action:

1. Implement via permit condition.

ARB Response: Pending completion of above.

- 3I. **Require a retrofit of all dispensers with adequate hardware/software to meet CARB requirements that dispensers not dispense gasoline if the vacuum pump is non-operational.** Vapor Recovery Committee has data showing vacuum pumps are not operational during dispensing.

Requested CARB Action:

1. Evaluate currently certified bootless systems and, if necessary, require retrofitting with adequate hardware/software to ensure that dispensers not dispense gasoline if the vacuum pump is non-operational. Of special concern are Dresser-Wayne dispensers installed prior to 8/26/96.

Action to Date: The following certifications currently include this condition.

G-70-150, AA, AB, AC, AD

G-70-153, AA, AB, AC

G-70-154, AA

G-70-169, AA

Future Action: One of the criteria under consideration as part of the In-station diagnostics feature of the EVR program is to require, when possible, that gasoline can not be dispensed if the vacuum pump is non-operational. The EVR package is currently scheduled for review by the Board in August 1999. CARB will determine what legal authority, if any, it has to retroactively impose this requirement on equipment that was in compliance with the certification when it was installed.

District Action:

1. Conduct screening and testing with appropriate test procedures.  
ARB Response: Appropriate enforcement action should be taken for vapor pumps that are found to be out of compliance with the required performance standards.

#### 4. DEVELOP APPROPRIATE SYSTEM PERFORMANCE TESTS

- 4A. **(HIGH PRIORITY) Evaluate the 27" vacuum test, developed by Dresser-Wayne, as quickly as possible. Sufficient data has been presented that proves that gas-tightness between the nozzle and the vacuum pump is essential to removing liquid blockage in hoses.**

Requested CARB Action:

1. Evaluate the 27" vacuum test developed by Dresser-Wayne.

Action to Date: Prototype test equipment has been assembled and demonstrated to the districts.

Future Action: More fieldwork is needed prior to formalizing a test or inspection procedure. Fieldwork is scheduled to begin by December 1.

ARB will work with CAPCOA to formalize a test procedure for presentation to the Board. A draft procedure will be made available for peer review by January 1999. The item will be included in the EVR package, which is currently scheduled for review by the Board in August 1999.

2. Evaluate the benefits of installing a ball valve/quick disconnect or a "T" on the inlet side of the vapor pump in order to isolate the pump-nozzle path for testing purposes.

Action to Date: None.

Future Action: A report will be generated on the benefits of this proposal by March 1, 1999.

3. Include this 27" test procedure into the installation and maintenance manuals approved in the executive order.

Action to Date: None.

Future Action: Once adopted, ARB will reference the procedure in the Executive Orders.

4B. **(HIGH PRIORITY) Evaluate the BAAQMD "bag test".**

Requested CARB Action:

1. Evaluate the BAAQMD "bag test".

Action to Date: ARB has evaluated the bag test and finds it to be viable for determining nozzle vapor path leaks

Future Action: Test will be used to survey nozzles in the field evaluation for vapor leaks.

2. Clarify the "bag test" as an appropriate mechanism for identifying Title 17 defects.

Action to Date: The bag test has been evaluated.

Future Action: This will be considered for inclusions in the rule-making package to be presented to the Board. The package is currently scheduled for review in August 1999.

3. Include as an inspection procedure in the executive order.

Action to Date: None.

Future Action: Once this is officially adopted by the Board, it will be included or referenced in the appropriate E.O.'s.

## District Action:

1. Utilize the "bag test" as an inspection technique for evaluating nozzles vapor leaks

ARB Response: Nothing currently prohibits the Districts from implementing the "bag test" inspection procedure immediately.

## 5. REVISE CERTIFICATION EVALUATION AND TESTING METHODS

- 5A. **Failure mode testing should be included in the system evaluation process to determine long-term component reliability that will also assist in problem diagnosis.**

## Requested CARB Action:

1. Pursuant to CP-201, Section 5, perform failure mode testing during system evaluation and certification.

Action to Date: Failure mode testing is routinely conducted during system evaluation and certification.

Future Action: CARB welcomes any suggestions for testing that CAPCOA wishes to submit.

2. Require industry to provide expected product life for components based on throughput and type of dispenser configuration.

Action to Date: None.

Future Action: Proposal will be included in EVR package, and discussed with industry at the workshops. The EVR package is currently scheduled for review by the Board in August 1999.

3. Evaluate extended warranty requirements.

Action to Date:

Future Action: This proposal will be included in EVR package, and discussed with industry at the workshops. The Board hearing is scheduled for August 1999.

- 5B. **Limit the effective life of certifications to four years.** Historical experience with the certification process has demonstrated the problems with open-ended certifications. This has been discussed in ARB meetings and the Vapor Recovery Committee supports its inclusion.

## Requested CARB Action:

1. Limit the effective life of system certifications to four years.

Action to Date: CARB does not concur, since adequate provisions currently exist in the law for the decertification of vapor recovery equipment.

Future Action: None.

2. Perform an engineering evaluation at the end of the 4-year period and require necessary modifications to the system or components prior to re-certification.

Action to Date: None.

Future Action: CARB is willing to perform engineering evaluations as necessary at any time. As stated above, adequate provisions currently exist in the law for the decertification of vapor recovery equipment.

- 5C. **Re-evaluate above ground tank certification procedures.** Districts have raised concerns that vapor recovery systems certified for use on above ground tanks are operating at less than 95% efficiency.

Requested CARB Action:

1. Re-evaluate above ground tank certification procedures.

Action to Date: None.

Future Action: It is not clear if the District concerns regarding aboveground tanks relate to the certification procedures or to in-use efficiencies. We request clarification from CAPCOA on this issue.

2. Conduct joint CARB/district system source tests.

Action to Date: None.

Future Action: Pending the review of the additional information requested above.

- 5D. **Add language to TP-201.5 regarding draining of hoses prior to vacuum tests.**

Requested CARB Action:

1. Revise the language in TP-201.5 (A/L) to include the following: *No liquid shall be drained from the hoses in order to facilitate passage of the A/L tests prior to conducting the tests.*

Action to Date: None.

Future Action: Language to this effect will be added to TP-201.5 when next revised. A new TP-201.5 is currently scheduled for review by the Board in August 1999.

District Action:

1. Include the hose draining prohibition in local district test policy.  
ARB Response: The Compliance Division will request an opinion from our legal staff by October 20th regarding this issue.

## 6. MISCELLANEOUS CONCERNS

### 6A. **Develop system specific maintenance schedules and logs and include in the applicable executive orders.**

Requested CARB Action:

1. Develop system specific maintenance schedules and logs and include in the applicable executive orders.

Action to Date: None.

Future Action: CARB will work with the manufacturers to incorporate maintenance schedules into their installation and maintenance manuals. To be completed by July 1999.

District Action:

1. Require maintenance logs as a permit condition.  
ARB Response: Concur.
2. Assist WSPA in the development of maintenance logs that will provide information on PM programs, component reliability, and individuals performing the maintenance and testing.  
ARB Response: Concur.

### 6B. **Revise Title 17.** Title 17 identifies system defects that substantially impair the effectiveness of the system and are subject to being tagged "Out of Service" (CH&SC Section 41060.2(c)). The existing list of defects is 17 years old and does not address many of the systems and components currently in use. Reestablishing this list will provide consistency throughout the state and help protect the affected businesses by allowing them to factor in the enforcement requirements of the various Phase II systems, into their final decision for system selection.

Requested CARB Action:

1. Revise Title 17 and include one page summary of relevant Title 17 defects in each executive order.

Action to Date: Each of the certification Executive Orders identifies the defects specific to the system which are not included in Title 17.

Future Action: One page summaries of relevant defects will be developed for existing and new Executive Orders by December 1, 1998.

2. Review and amend, as needed, the Title 17 defect list annually.

Action to Date: It is more efficient to include the defects in the E.O.'s, as opposed to annually presenting to the Board which is a very time intensive process.

Future Action: A request will be included to have these Title 17 defects delegated to the Executive Office for approval. This item will be included in the EVR package that is currently scheduled for review by the Board in August 1999. This will make it easier to annually provide an update to the list of Title 17 defects.

- 6C. **Develop Industry standards for vapor recovery equipment.** It is suggested that CARB establish standards for vapor recovery equipment durability, materials, piping, etc. that are similar to building specifications developed and used by industry. This may be contracted to an independent firm. (i.e. API, etc.)

Requested CARB Action:

1. Develop Industry standards for vapor recovery equipment.

Action to Date: The Compliance Division will consult with our legal staff to determine what authority we have to develop such standards.

Future Action: Pending legal review of authority.

2. Include test data/technical reports from individual districts.

Action to Date: CARB requires further clarification of this item.

Future Action: Pending clarification.

- 6D. **Enforce the 100% factory testing of nozzles, as specified in the executive orders.** This is necessary to reduce fugitive VOC and toxic emissions caused by pressure in underground storage tanks. In addition to the tests for nozzle shutoffs, the bootless nozzles should also be 100% factory-tested for (a) pressure vs. vacuum and (b) static pressure integrity, specifically at the spout/body interface and vapor check valve verified by factory inspections.

Requested CARB Action:

1. Perform periodic auditing/testing of manufacturers' and distributors' components.

Action to Date: CARB has enforced this in the past and will continue to do so.

Future Action: Within resource limitations, ARB will continue to survey a number of components from the shelves of supply houses.

- 6E. **Allow the Vapor Recovery Committee a 30-day review period prior to the issuance of new executive orders.** Acceptance of this proposal would result in the dual benefits of providing the local districts the necessary lead-time to integrate the new components, or systems, into both their Permit and Enforcement policies. This review period would be a tremendous aide in the Permit streamlining effort and provide adequate time for training of local inspectors. It also would provide CARB with comments on issues of clarity, and intent, prior to the formal issuance of the executive orders.

Requested CARB Action:

1. E-mail the draft executive orders to the districts and allow 30 days for review and comment.

Action to Date: Hardcopies drafts are sent to CAPCOA chair for review and comment.

Future Action: Drafts will be electronically mailed to the representative identified by CAPCOA as the designated contact. Any comments on issues of clarity and intent would be compiled into a single document and electronically submitted to CARB, along with identification of the districts which participated in the preparation of the comments.

- 6F. **Develop a "Summary of Certification" document to be included with each executive order.** Section 41954 of the H&SC specifies the mechanism to obtain certification. If all of the procedures in the CARB test procedures are followed, the systems will perform properly. CARB should supply a "Summary of Certification Process" document with each executive order. This summary should clearly document that all phases of the process, from application through efficiency testing were successfully completed.



Requested CARB Action:

1. Develop a "Summary of Certification" document to be included with each executive order.

Action to Date: Executive Orders are only issued after the successful completion of the certification requirements as stated in the Certification Procedure.

Future Action: ARB will issue a summary of certification with all future Executive Orders.

**6G. Establish a certification program for individual testing personnel.**

Requested CARB Action:

1. Establish a certification program for individual testing personnel.

Action to Date: Plans for an approval program were being drafted prior to the latest suggested revisions to the Air-to-Liquid test method.

Future Action: ARB staff will review and complete the previously drafted plans following completion of the new version of the test method. Changes will be made as are deemed necessary and the proposed plan will be submitted to the CAPCOA Vapor Recovery Technical committee for their review.

**6H. Establish standards for above ground storage tank systems.** Rural districts expressed concern that this problem was overlooked in the previous CAPCOA recommendations (January 1996 letter to Jim Morgester). At a CAPCOA Vapor Recovery Committee meeting, CARB agreed to bring uniformity to the above ground tank test and installation standards and to address the problem of leaking emergency pressure relief valves. This has become increasingly important as aboveground tanks replace underground tanks for commercial operations in rural districts.

Requested CARB Action:

1. Revise above ground tank certifications to bring uniformity to testing requirements and equipment installation standards.

Action to Date: The ARB had prepared draft Executive Order G-70-187, which is intended to summarize all current acceptable hose configurations and piping layouts for aboveground tank storage and dispensing systems. A copy of the draft E.O. has been provided to CAPCOA Vapor Recovery Technical committee members and we are working with the committee to address their concerns. ARB has made an effort to contact AGT manufacturers and obtain their approval to modify the requirements for annual pressure decay testing and PV valve performance specifications.

Future Action: Because of the very low response rate from the manufacturers, we need to determine if the changes can be legally made without the consent of the manufacturer. To do so may require a public hearing with appropriate noticing and comment periods. If this is the case, it will require a significant amount of staff resources and the project will need to be prioritized among the other job assignments.

**6l. Develop and implement a system specific preventative maintenance program.**

Requested CARB Action:

1. Work with industry and districts to identify key operating parameters and functions to be incorporated into the PM program (i.e. testing of nozzle/breakaway mechanisms after a drive-off).

Action to Date: Some manufacturers have begun pilot study programs concerning PM and annual maintenance requirements for their systems.

Future Action: See response to 3F1. The data from the program is intended to provide the key operating parameters and functions to be incorporated in the PM program.